For the 9:30 -10:30 Policy discussion:

- Purpose of the List
- Purpose of the Rule

WAC 173-XXX- 100 Purpose

(1) What is the purpose of this chapter?

The purpose of this chapter is to establish processes that Ecology will use to minimize and where possible eliminate threats to human health and the environment caused by the use and release of persistent bioaccumulative toxins. Since December 2000, Ecology has implemented an agency persistent bioaccumulative toxins (PBT) strategy focused on achieving further reductions of chemicals, groups of chemicals, or metals, that accumulate in human and animal tissues. The Ecology PBT Strategy is designed to organize into one plan a multimedia approach for addressing PBTs within existing authorities. This chapter:[1]

(a) Establishes criteria Ecology will use to identify persistent bioaccumulative toxins;

(b) Establishes a list of persistent bioaccumulative toxins and procedures Ecology will use to review and periodically update the list;

(c) Establishes criteria for selecting persistent bioaccumulative toxins for which Ecology will prepare chemical action plans; and

(d) Defines the scope and content of chemical action plans and establishes processes Ecology will use to prepare those plans.

[1] Subsections (a) – (c) address the three rulemaking purposes identified by the Legislature in the 2004 budget proviso. Specifically, the Legislature directed Ecology to (1) develop specific criteria by which chemicals may be included on a PBT list, (2) develop a specific list of PBTs and (3) establish criteria for selecting chemicals for chemical action plans. The fourth rulemaking purpose is designed to respond to the suggestions from the Advisory Committee on the question of what makes a good rule (August 18th meeting). Specifically, several members that it was important to provide some level of certainty and predictability on how Ecology will address chemicals that are included on the PBT list. .

WAC 173-XXX-300 What is the purpose of the PBT List?

(1) The purpose of the PBT List is to:

Identify persistent, bioaccumulative and toxic chemicals, and metals, that Ecology has determined, based upon the criteria specified in WAC 173-XXX-110. Ecology intends to use the PBT List in the following four ways:

a. Chemical Action Plans: Ecology will use the PBT List to identify chemicals for which the department will prepare chemical-specific action plans. Chemical-specific action plans will provide a mechanism for identifying and evaluating additional measures to reduce and, where possible, eliminate current sources and uses of individual PBT chemicals.

b. Environmental (Ambient) Monitoring: Ecology will use the PBT list to identify PBTs that are a priority for additional environmental monitoring. The PBT List is not intended to be used to require specific permit discharge monitoring of permit holders just because the chemical is on the PBT list.

c. Voluntary Measures: The PBT List shall not prevent Ecology from using the framework for voluntary reductions as outlined in the environmental protection agency's National Waste Minimization Plan.

d. Public Education and Environmental Information: The department will use the PBT List for increasing public awareness on the problems associated with PBT chemicals.

(2) The PBT List is not a listing of chemicals that should be **"banned"**. Furthermore, the chemicals identified on this list does not suggest or imply that Ecology will be giving less attention to other chemicals or pollutants that are **not** on the PBT List.

(3) This list is not a call for additional environmental regulations or statutes to further protect Washington's air, land, and water resources. Any changes to regulations or statutes are expected to be recommended in the specific chemical action plan development process. If these recommendations are acted upon, they are expected to follow the process outlined in the administrative procedures act.

WAC 173-XXX-200 Definitions[2]

"Bioaccumulation" means the process by which organisms accumulate a chemical in their body as a result of uptake from all environmental sources.[3]

"Bioaccumulation factor" or "BAF" means the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BAF is a measure of the extent to which the organism accumulates the chemical as a result of uptake through ingestion as well as contact from contaminated media, such as water.[4]

"Bioconcentration factor" or "BCF" means is the ratio of the concentration of a chemical in an organism to the concentration of the chemical in the surrounding environment. The BCF is a measure of the extent of chemical partitioning between and their surrounding environment. The BCF does not evaluate uptake through ingestion, only through contact with environmental media. [5]

"Carcinogen" means any chemical or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen applies to chemicals on the United States Environmental Protection Agency lists of A (known human) and B (probable human) carcinogens, and any chemical that causes a significant increased incidence of benign or malignant tumors in a single, well conducted animal bioassay, consistent with the weight of

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[2] Ecology has reviewed the meeting notes and summaries from the first two meetings (as well as various PBT strategies, rules, treaties) and identified a preliminary list of terms that we believe should be defined in the rule. All definitions are very draft at this time. Ecology is interested in feedback from the committee on: (1) Does the committee believe that the rule should include definitions for the identified terms?; (2) Does the committee believe the draft definitions are clear and accurate? (if not, does the committee have suggestions for improving the clarity and accuracy?); and (3) Does the committee believe this section should include definitions for other terms?

[3] The draft definition is based on the definition of bioaccumulation in the preamble to the proposed amendments to the Toxic Release Inventory rules (64 FR 703). EPA has adopted similar definitions in other rules and guidance materials. The draft definition incorporates the concept of (1) a process, (2) accumulation in organisms and (3) uptake from multiple sources. An alternate approach would be to use the term "bioaccumulation potential" which is more focused on the properties of the chemical (as opposed to the process). EPA included the following definition for this term in the technical support documents for the WMPT (EPA, 1998) and the Hazardous Waste Identification Rule (EPA, 1995): "Bioaccumulation potential is the capacity of a chemical to increase in concentration or accumulate (be stored in tissue) in an organism as a result of uptake from all environmental sources over a period of time".

[4] The draft definition was taken from the WMPT technical support document (EPA 1998) which references the Hazardous Waste Identification Rule. It is consistent with other standard definitions of the term found in other laws, treaties, guidance materials and textbooks and captures the concepts of (1) ratio of concentrations in tissue and surrounding media; (2) uptake from all environmental media or sources; (3) it is a measure of bioaccumulation or bioaccumulation potential.

[5] The draft definition was taken from the WMPT technical support document (EPA 1998) which references the Hazardous Waste Identification Rule. It is consistent with other standard definitions of the term found in other laws, treaties, guidance materials and textbooks and captures the concepts of (1) ratio of concentrations in tissue and surrounding media; (2) partitioning between organism and environmental media; (3) it is a measure of bioaccumulation or bioaccumulation potential.

evidence approach specified in the United States Environmental Protection Agency's Guidelines for Carcinogen Risk Assessment as set forth in 51 FR 33992 et seq.[6]

"Chemicals" means a naturally occurring element, or mixture of organic and inorganic chemicals that is produced by or used in a chemical process.

"Chemical group" means a grouping of chemicals which share a common chemical structure with differing molecular variations.

"Chemical Action Plan" or "CAP" means a plan that identifies, characterizes and addresses uses and releases of a specific PBT or a group of PBTs and facilitates implementation of measures to manage, minimize and, where feasible, eliminate such uses and releases.[7]

"Cross-media Transfer of Chemicals" means the movement of a chemical from one medium, such as air, water, soil, or sediment, to another.

"Ecology" means the department of ecology.

"Ecology PBT Strategy" means the strategy Ecology developed in December 2000 which specifies a long range plan to continually reduce risks to human health and Washington's environment from exposures to PBTs, using the following goals[8]:

- Reduce and phase-out existing sources of PBTs.
- Clean up PBTs from historical sources.
- Prevent new sources of PBTs.
- Build partnerships to promote efforts to reduce and eliminate PBTs.
- Improve regulatory and non-regulatory approaches.
- Identify and prioritize additional PBTs.
- Improve public awareness and understanding of PBT problems and solutions.
- Promote the development of information needed to make informed decisions on measures to reduce PBTs.

"Environment" means any plant, animal, natural resource, surface water (including underlying sediments), ground water, drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air within the state of Washington or under the jurisdiction of the state of Washington.

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[6] The approach used by Ecology to prepare the PBT working list includes separate toxicity criteria for carcinogenic and non-cancer health effects. The draft definition for "carcinogen" is copied from the MTCA Cleanup Regulation (similar if not identical definitions are found in other Ecology rules and guidance). If the final PBT criteria incorporate the EPA toxicity criteria (or similar approaches), this definition would need to be updated to reflect the current EPA guidance on Carcinogen Risk Assessment.

[7] The draft definition is based on the concepts and language on action plans in the Stockholm Convention on Persistent Organic Pollutants (See Article 5).

[8] From the Ecology PBT Strategy (December 2000).

"Environmental half-life" means the time required for the concentration of a chemical to diminish to half its original value. The environmental half-life of a chemical is a measure of that chemical's persistence in the environment.

"Manage" actions to reduce the uses and releases of PBTs and may include application of best available technology to reduce PBT generation and releases, process changes to reduce or eliminate PBT generation and releases, product substitution to eliminate uses and releases and other measures to directly or indirectly reduce threats to human health and the environment.[9].

"Media or Medium" means a component of the environment (air, water, soil or sediment) in which a contaminant is measured and an organism lives its life, and from which an organism can accumulate contaminants.

"Persistent bioaccumulative toxin" or "PBT" means a chemical or chemical group that meets or exceeds the criteria for persistence, bioaccumulation and toxicity criteria established in this chapter

"**Persistence"** means the tendency of a chemical to remain in the environment without transformation or breakdown into another chemical form. It refers to the length of time a chemical is expected to reside in the environment and be available for exposure. [10]

"Reduce and where possible eliminate" means actions to reduce the uses and releases of PBTs and may include process changes designed to reduce or eliminate PBT generation and releases or product substitution to eliminate uses and releases[11].

"Toxicity" means the ability of a substance to cause injury or death to an organism, including humans[12].

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[9] The draft definition is designed to capture the concepts discussed at the September 8 Advisory Committee meeting. Specifically, the draft definition reflects suggestions that "manage" is a broad term that captures many options for reducing/eliminating PBT uses and releases. The range of examples are based on the measures identified in the Stockholm Convention on Persistent Organic Pollutants (See Article 5).

[10] The draft definition was taken from the WMPT technical support document (EPA 1998). It is consistent with other standard definitions of the term found in other laws, treaties, guidance materials and textbooks and captures the concepts of (1) length of time a chemical remains in the environment; (2) available for exposure. A separate definition is provided for "environmental half-life" which is the standard measure of persistence.

[11] The draft definition reflects the term as it is generally applied in the Ecology PBT Strategy (December 2000).

[12] The MTCA Cleanup Regulation (Chapter 173-340 WAC) includes definitions for "acute toxicity" and "chronic toxicity". The draft definition for "toxicity" is based on those two definitions. Alternate definitions could be developed based on the definition of "toxic" found in the Dangerous Waste Regulations (See WAC 173-303-040) which includes the following definition: "Toxic" means having the properties to cause or significantly contribute to death, injury, or illness of man or wildlife.